



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/636,308	08/11/2000	Timothy A. Okel	1527A2	7905
24959	7590	01/02/2004		
PPG INDUSTRIES INC INTELLECTUAL PROPERTY DEPT ONE PPG PLACE PITTSBURGH, PA 15272			EXAMINER TSOY, ELENA	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/636,308	OKEL ET AL.	
	Examiner	Art Unit	
	Elena Tsoy	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Amendment filed on August 22, 2003 has been entered. Claims 1-18 are pending in the application.

Claim Objections

1. Objection to claim 16 because of the informalities has been withdrawn.
2. Claim 2 is objected to because of the following informalities: the formula of claim 2 in line 4 has the same number VII as formula of claim 14. For examining purposes the number is interpreted as "I".

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-3, 5-16, 18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,384,125 to Bergstrom et al in view of Burns et al (US 5,708,069).

Although the conflicting claims are not identical, they are not patentably distinct from each other because Bergstrom et al disclose a process for treating silica filler such as colloidal silica (See Claim 3) or precipitated silica (See Claim 2) for the use in rubber compositions (See

column 15, lines 25-54), which comprises steps substantially identical to those of claimed invention with the use of combination of (a) non-sulfur organometallic compounds of formula $R_aR'_bSiX_{4-a-b}$ (See column 15, lines 32-45) selected from the group consisting of allylmethyldichlorosilane, vinylmethyldichlorosilane, vinylmethyldichlorosilane, vinylmethoxysilane, hexenylmethyldichlorosilane, and hexenylmethyldichlorosilane (See column 16, lines 3-7), and (b) organometallic hydrophobing compounds of formula R_aSiX_{4-a} (See column 16, lines 9-14) selected from the group consisting of various non-sulfur organometallic compounds and sulfur-containing organometallic compounds such as mercaptoalkylalkoxysilanes (See column 16, lines 30-31), e.g. mercaptopropyltrimethoxysilane (See column 16, lines 60), bis(alkoxysilylalkyl)polysulfides (See column 16, lines 30-31), e.g. bis(triethoxysilylpropyl)disulfide (See column 16, lines 60-61), in a weight ratio of (a) to (b) of at least 0.001 to 1 (See column 15, lines 46-47; claims 11, 12).

Bergstrom et al do not expressly show that non-sulfur organometallic compounds (a) are used in combination with sulfur-containing organometallic compounds of organometallic hydrophobing compounds (b) such as mercaptoalkylalkoxysilanes, e.g. mercaptopropyltrimethoxysilane, bis(alkoxysilylalkyl)polysulfides, e.g. bis(triethoxysilylpropyl)disulfide.

Burns et al '069 teach that a mixture of bis{3-(triethoxysilyl)propyl}tetrasulfide (sulfur-containing organometallic compound) and dimethyldichlorosilane (non-sulfur organometallic compound) can be used as hydrophobing agent in a process of producing hydrophobic silica surfaces such as surface of silica hydrogel (aggregates of colloidal silica) (See example 6, column 10, lines 48-53; column 5, lines 18-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mixture of bis{3-(triethoxysilyl)propyl}tetrasulfide (sulfur-containing organometallic compound) and non-sulfur organometallic compound as hydrophobing agent in a process of Bergstrom et al with the expectation of providing the desired hydrophobic silica, as taught by Burns et al '069.

Bergstrom et al in view of Burns et al '069 fail to teach that mercaptomethyltrimethoxysilane can be used instead of bis{3-(triethoxysilyl)propyl}tetrasulfide (Claim 1).

It should be noted that according to Burns et al '069, mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide are functionally equivalent for their use as hydrophobing compounds.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used mercaptomethyltrimethoxysilane instead of bis{3-(triethoxysilyl)propyl}tetrasulfide in Bergstrom et al in view of Burns et al '069 since according to Burns et al '069, mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide are functionally equivalent for their use as hydrophobing compounds and the selection of any of these known material as an electron-acceptor in Bergstrom et al in view of Burns et al '069 would be within the level of ordinary skill in the art.

Bergstrom et al in view of Burns et al '069 fail to teach that bis{3-(triethoxysilyl)propyl}tetrasulfide can be used in a combination with mercaptomethyltrimethoxysilane (Claim 12).

It is held that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See also In re Crockett, 279 F.2d 274, 126 USPQ 186 (CCPA 1960); and Ex parte Quadranti, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used bis{3-(triethoxysilyl)propyl}tetrasulfide in a combination with mercaptomethyltrimethoxysilane instead of bis{3-(triethoxysilyl)propyl}tetrasulfide in a process of Bergstrom et al in view of Burns et al '069 since it is held that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.

Bergstrom et al in view of Burns et al '069 fail to teach that weight ratio of mercaptoalkylalkoxysilane to bis(triethoxysilylpropyl)disulfide is greater than 1:1 (Claim 12) or from 5:1 to 50:1(Claim 13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have discovered the optimum or workable concentration ranges of mercaptoalkylalkoxysilane and bis(triethoxysilylpropyl)disulfide (and their weight ratio) in Bergstrom et al in view of Burns et al '069 by routine experimentation since it is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987).

5. Claims 4, 17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8 of U.S. Patent No. 6,384,125 to Bergstrom et al in view of Burns et al (US 5,708,069), and further in view of Cruse et al (WO 99/09036).

Bergstrom et al in view of Burns et al, as applied above, fail to teach that mercaptoalkylalkoxysilane is blocked.

Cruse et al teach that the use blocked mercaptosilanes in filled rubbers allows the mixing of fillers with organic polymers to proceed while remaining inert toward coupling to the polymer until they are triggered by addition of an appropriate deblocking agent (See Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used blocked mercaptosilanes for treating silica in a process of Bergstrom et al in view of Burns et al with the expectation of providing the desired prevention of premature reaction with a filled rubber, as taught by Cruse et al.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person *having ordinary skill in the art to which said subject matter pertains*. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-3, 5-8, 10, 12, 14-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (US 5,708,069).

Burns et al '069 disclose a process of producing hydrophobic filler for the use in rubber compositions (See column 1, lines 28-33) comprising reacting an acidic aqueous suspension (See

Art Unit: 1762

column 10, lines 44-50) of silica gel (aggregates of colloidal silica) (See column 3, lines 1-2; column 5, lines 18-23) with **mixtures** of **two** or **more** organosilicon compounds (See column 6, lines 22-23) selected from sulfur-containing organometallic compounds, e.g. mercaptomethyltrimethoxysilane (mercaptoorganometallic compound of claimed formula I) and bis{3-(triethoxysilyl)propyl}tetrasulfide ((bis(alkoxysilylalkyl)polysulfide of claimed formula VII) (See column 6, lines 36-37), and non-sulfur organometallic compounds of claimed formula $R^1_a-SiX_{4-a}$, e.g. *dimethyldichlorosilane* allylmethyldichlorosilane, vinylmethyldichlorosilane, vinylmethyldichlorosilane, vinyltrimethoxysilane, hexenylmethyldichlorosilane, and hexenyltrimethoxysilane (See column 6, lines 25-35), at pH of less than 2.5 (See column 5, lines 47-51) in the presence of a water miscible solvent (See column 4, lines 62-65) and a surfactant (See column 6, lines 51-52), thereby forming an acidic suspension of the chemically modified filler (See column 5, lines 34-55); and recovering the hydrophobic silica (See column 6, lines 63-64). The mixture of the organosilicon compounds includes a mixture of bis{3-(triethoxysilyl)propyl}tetrasulfide (sulfur-containing organometallic compound) and dimethyldichlorosilane (non-sulfur organometallic compound of claimed formula $R^1_a-SiX_{4-a}$) (See example 6, column 10, lines 48-53).

Burns et al '069 show that pH of silica hydrosol may be elevated by adding a base (See column 4, lines 21-25). Burns et al '069 further teach that their invention is directed to method of preparation of hydrophobic silica gel under **neutral** conditions (See column 3, lines 1-2, 26-27) while reaction of silica with hydrophobing agent is **preferably** carried out at **pH less than 2.5** (See column 5, lines 47-51). However, Burns et al '069 do not expressly show that upon the completion of reaction a neutralizing base is added to elevate pH of less than 2.5 to neutral pH.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used added a base upon completion of hydrophobing reaction carried at pH of less than 2.5 in Burns et al '069 with the expectation of providing the desired neutral pH.

It should be noted that according to Burns et al '069 mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide are functionally equivalent for their use as hydrophobing compounds.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used mercaptomethyltrimethoxysilane instead of bis{3-(triethoxysilyl)propyl}tetrasulfide in a process of Burns et al '069 since Burns et al '069 teach that mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide are functionally equivalent for hydrophobing silica, and the selection of any of these known material as hydrophobing agent in Burns et al '069 would be within the level of ordinary skill in the art.

Burns et al '069 fail to teach that bis{3-(triethoxysilyl)propyl}tetrasulfide can be used together with mercaptomethyltrimethoxysilane (Claim 12).

It is held that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See also In re Crockett, 279 F.2d 274, 126 USPQ 186 (CCPA 1960); and Ex parte Quadranti, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used bis{3-(triethoxysilyl)propyl}tetrasulfide in a combination with mercaptomethyltrimethoxysilane instead of bis{3-(triethoxysilyl)propyl}tetrasulfide in a process

of Burns et al '069 since it is held that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.

As to the concentration limitations (weight ratio) of claims 1, 10, 12, it is held that concentration limitations are obvious absent a showing of criticality. Akzo v. E.I. du Pont de Nemours 1 USPQ 2d 1704 (Fed. Cir. 1987).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant concentration parameters (including those of claims 1, 10, 12) in a process of Burns et al '069 through routine experimentation in the absence of a showing of criticality.

8. Claims 1-3, 5-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (US 6,051,672) in view of Burns et al (US 5,708,069).

Burns et al '672 disclose a process of producing hydrophobic filler for the use in rubber compositions (See column 1, lines 22-26) comprising reacting an acidic aqueous suspension of colloidal silica with one or *more* organosilicon compounds (coupling agent) (See column 2, lines 53-67; column 3, lines 56+) at pH within a range of pH 0 to pH 3.5 (See column 5, lines 20-22) in the presence of a water miscible solvent (See column 4, lines 62-65) and optionally a surfactant (See column 5, lines 10-19), thereby forming an acidic suspension of the chemically modified filler (See column 5, lines 45-49); terminating the reaction by adding a base to elevate the pH (See column 5, lines 61-63) to e.g. 9-11 (See column 5, lines 22-26) and recovering the hydrophobic silica (See column 6, lines 38-40). The organosilicon compounds are **mixtures** of **two** or **more** organosilicon compounds (See column 4, lines 26-27) including sulfur-containing

organometallic compounds, e.g. mercaptomethyltrimethoxysilane (mercaptoorganometallic compound of claimed formula VII) (See column 4, lines 39-40) and bis{3-(triethoxysilyl)propyl}tetrasulfide ((bis(alkoxysilylalkyl)polysulfide of claimed formula I), and non-sulfur organometallic compounds of claimed formula $R^1_a-SiX_{4-a}$ (See column 2, lines 60, 65-67; column 3, lines 3-4), e.g. dimethyldichlorosilane, allylmethyldichlorosilane, vinylmethyldichlorosilane, vinylmethoxysilane, hexenylmethyldichlorosilane, and hexenyldimethylchlorosilane (See column 4, lines 28-41). However, Burns et al '672 do not expressly show that the mixture includes a mixture of sulfur-containing organometallic compounds such as mercaptoorganometallic compounds, e.g. mercaptomethyltrimethoxysilane and/or bis(alkoxysilylalkyl)polysulfides, e.g. bis{3-(triethoxysilyl)propyl}tetrasulfide, and non-sulfur organometallic compounds of claimed formula $R^1_a-SiX_{4-a}$.

Burns et al '069 teach that a mixture of bis{3-(triethoxysilyl)propyl}tetrasulfide (sulfur-containing organometallic compound) and dimethyldichlorosilane (non-sulfur organometallic compound of claimed formula $R^1_a-SiX_{4-a}$) (See example 6, column 10, lines 48-53) can be used as hydrophobing agent in a process of hydrophobing silica surface, e.g. surface of silica hydrogel (aggregates of colloidal silica) (See column 5, lines 18-30). In other words, Burns et al '069 expressly teaches that a **mixture of two or more** hydrophobing organosilicon compounds from a list of compounds (See column 6, lines 22-40) which is identical to the list of hydrophobing compounds of Burns et al '672 (See column 4, lines 26-41), i.e. includes the *same* two sulfur-containing organometallic compounds, e.g. mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide (See column 6, lines 22-23, 36-37) and the *same* non-sulfur

organometallic compounds of claimed formula $R^1_a-SiX_{4-a}$ (See column 6, lines 25-35), does include a mixture of sulfur-containing organometallic compound and non-sulfur organometallic compound of claimed formula $R^1_a-SiX_{4-a}$.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a mixture of bis{3-(triethoxysilyl)propyl}tetrasulfide and non-sulfur organometallic compound in a process of Burns et al '672 with the expectation of providing the desired hydrophobing effect, as taught by Burns et al '069.

It should be noted that according to both Burns et al '069 and Burns et al '672, mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide are functionally equivalent for their use as hydrophobing compounds.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used mercaptomethyltrimethoxysilane instead of bis{3-(triethoxysilyl)propyl}tetrasulfide in a process of Burns et al '672 since Burns et al '069 teach that mercaptomethyltrimethoxysilane and bis{3-(triethoxysilyl)propyl}tetrasulfide are functionally equivalent for hydrophobing silica, and the selection of any of these known material as hydrophobing agent in Burns et al '069 would be within the level of ordinary skill in the art.

Burns et al '672 in view of Burns et al '069 fail to teach that bis{3-(triethoxysilyl)propyl}tetrasulfide can be used in a combination with mercaptomethyltrimethoxysilane (Claim 12).

It is held that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to

be used for the very same purpose.... In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). See also In re Crockett, 279 F.2d 274, 126 USPQ 186 (CCPA 1960); and Ex parte Quadranti, 25 USPQ2d 1071 (Bd. Pat. App. & Inter. 1992).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used bis{3-(triethoxysilyl)propyl}tetrasulfide in a combination with mercaptomethyltrimethoxysilane instead of bis{3-(triethoxysilyl)propyl}tetrasulfide in a process of Burns et al '672 in view of Burns et al '069 since it is held that it is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.

As to claims 7, 9, Burns et al '672 further teach that the hydrophobic non-aggregated colloidal silicas have a smaller particle size than that of aggregate silicas such as *precipitated* silica and can be used in the same applications while providing comparable reinforcement (See column 1, lines 19-26, 50-54). In other words, *precipitated* silica is chemically identical to colloidal silicas except for the size and is useful for the same purpose. However, Burns et al '672 does not expressly show that precipitated silica can be rendered hydrophobic using the same method as for the colloidal silica.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a method of Burns et al '672 in view of Burns et al '069 with the expectation of providing the desired hydrophobed silica, since Burns et al '672 teach that precipitated silica is chemically identical to colloidal silicas except for the size and is useful for the same purpose.

As to the concentration limitations (weight ratio) of claims 1, 10-13, it is held that concentration limitations are obvious absent a showing of criticality. *Akzo v. E.I. du Pont de Nemours* 1 USPQ 2d 1704 (Fed. Cir. 1987).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined the optimum values of the relevant concentration parameters (including those of claims 1, 10-13) in a process of Burns et al '672 in view of Burns et al '069 through routine experimentation in the absence of a showing of criticality.

9. Claims 4, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burns et al (US 5,708,069)/Burns et al (US 6,051,672) in view of Burns et al (US 5,708,069), and further in view of Cruse et al (WO 99/09036).

Burns et al '069/Burns et al '672 in view of Burns et al '069, as applied above, fail to teach that mercaptoalkylalkoxysilane is blocked.

Cruse et al teach that the use blocked mercaptosilanes in filled rubbers allows the mixing of fillers with organic polymers to proceed while remaining inert toward coupling to the polymer until they are triggered by addition of an appropriate deblocking agent (See Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used blocked mercaptosilanes for treating silica in a process of Burns et al '069/Burns et al '672 in view of Burns et al '069 with the expectation of providing the desired prevention of premature reaction with a filled rubber, as taught by Cruse et al.

10. The prior art made of record and not relied upon is considered pertinent to applicant disclosure.

Menon et al (US 6,159,540) teach that gel is network of colloidal silica (See column 2, lines 4-15).

Response to Arguments

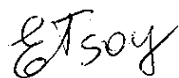
11. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30, Mo-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for all communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Elena Tsoy
Examiner
Art Unit 1762

December 11, 2003